

In the Claims:

1 Please cancel, without prejudice, claims 2, 6, 7, 15, 19 and 20.

2 Please amend the remaining claims as follows:

3 1. (currently amended) A disk drive comprising:

4 (a) a disk comprising a plurality of tracks, each track comprising a plurality of data
5 sectors;

6 (b) a head actuated radially over the disk, the head for generating a read signal while
7 reading data from at least one of the data sectors;

8 (c) a sampling device for sampling the read signal to generate read signal sample values;

9 (d) a sequence detector for detecting an estimated data sequence from the read signal
10 sample values;

11 ~~(e)(e) a buffer for buffering read data associated with the read signal;~~

12 ~~(d)(f) a disk controller for processing a read command received from a host computer by:~~

13 positioning the head over a selected data sector to generate a first read signal;

14 sampling the first read signal to generate a first sequence of read signal sample
15 values;

16 detecting a first estimated data sequence using the sequence detector from the first
17 sequence of read signal sample values;

18 storing in the buffer ~~first read data associated with the first read signal~~ the first
19 estimated data sequence;

20 if a read error occurs:

21 repositioning the head over the selected data sector to generate a second read
22 signal;

23 sampling the second read signal to generate a second sequence of read signal
24 sample values;

25 detecting a second estimated data sequence using the sequence detector from the
26 second sequence of read signal sample values;

27 averaging ~~second read data associated with the second read signal~~ the second
28 estimated data sequence with the first read data ~~estimated data sequence~~ stored
29 in the buffer to generate an averaged estimated data sequence ~~read data~~;
30 storing the averaged ~~read data~~ estimated data sequence in the buffer; and
31 processing the averaged ~~read data~~ estimated data sequence stored in the buffer to
32 recover the selected data sector.

1 2. (canceled)

1 3. (currently amended) The disk drive as recited in ~~claim 2~~ claim 1, wherein the disk
2 controller implements an error correction code (ECC) for detecting and correcting errors
3 in the averaged ~~binary bits~~ estimated data sequence.

1 4. (currently amended) The disk drive as recited in claim 3, wherein:
2 (a) the averaged estimated data sequence comprises averaged binary bits;
3 ~~(a)(b)~~ the averaged binary bits are grouped into ECC symbols;
4 ~~(b)(c)~~ a reliability metric is generated for each ECC symbol in response to a reliability
5 derived from averaging the binary bits; and
6 ~~(c)(d)~~ the disk controller processes the reliability metrics to augment the ECC.

1 5. (original) The disk drive as recited in claim 4, wherein:
2 (a) at least one erasure pointer is generated from the reliability metrics; and
3 (b) the disk controller processes the erasure pointer to increase the number of correctable
4 ECC symbols.

1 6. (canceled)

1 7. (canceled)

1 8. (currently amended) The disk drive as recited in ~~claim 7~~ claim 1, ~~wherein the read channel~~
2 ~~comprises~~ further comprising:
3 (a) an equalizer filter for filtering the averaged read signal sample values to generate
4 equalized read signal sample values, wherein the sequence detector detects the
5 estimated data sequences from the equalized sample values; and
6 ~~(b) a sequence detector for detecting the estimated data sequence from the equalized read~~
7 ~~signal sample values.~~

1 9. (original) The disk drive as recited in claim 1, wherein the disk controller adjusts at least
2 one parameter of the disk drive prior to rereading the selected data sector.

1 10. (original) The disk drive as recited in claim 9, wherein the disk controller adjusts a read
2 channel parameter.

1 11. (original) The disk drive as recited in claim 9, wherein the disk controller adjusts a servo
2 control parameter.

1 12. (original) The disk drive as recited in claim 11, wherein the disk controller adjusts a
2 tracking offset to at least two different settings wherein for each tracking offset setting
3 the disk controller performs at least one reread of the selected data sector to generate the
4 averaged read data.

1 13. (original) The disk drive as recited in claim 12, wherein for each tracking offset setting
2 the disk controller performs multiple rereads of the selected data sector to generate the
3 averaged read data.

(F)(i) storing the averaged read data/estimated data sequence in the buffer, and

27 ~~(g)(k)~~ processing the averaged ~~read data~~ estimated data sequence stored in the buffer
28 to recover the selected data sector.

1 15. (canceled)

1 16. (currently amended) The method as recited in ~~claim 15~~ claim 14, further
2 ~~comprising~~ wherein the step of processing the averaged estimated data sequence
3 comprises the step of using an error correction code (ECC) for detecting and correcting
4 errors in the averaged ~~binary bits~~ estimated data sequence.

1 17. (currently amended) The method as recited in claim 16, wherein the averaged estimated
2 data sequence comprises averaged binary bits, and the step of using the ECC for
3 detecting and correcting errors further comprising the steps of:
4 (a) grouping the averaged binary bits into ECC symbols;
5 (b) generating a reliability metric for each ECC symbol in response to a reliability
6 derived from averaging the binary bits; and
7 (c) processing the reliability metrics to detect and correct errors in the averaged
8 binary data.

1 18. (original) The method as recited in claim 17, further comprising the steps of:
2 (a) generating at least one erasure from the reliability metrics; and
3 (b) processing the erasure pointer to increase the number of correctable ECC
4 symbols.

1 19. (canceled)

1 20. (canceled)

- 1 21. (currently amended) The method as recited in ~~claim 20~~ claim 14, further comprising the
2 steps of:
3 (a) filtering the averaged-read signal sample values to generated equalized read signal
4 sample values, wherein the sequence detector detects the estimated data sequences
5 from the equalized sample values; and
6 (b) ~~detecting the estimated data sequence from the equalized read signal sample~~
7 ~~values.~~
- 1 22. (original) The method as recited in claim 14, further comprising the step of adjusting at
2 least one parameter of the disk drive prior to rereading the selected data sector.
- 1 23. (original) The method as recited in claim 22, wherein the step of adjusting a parameter of
2 the disk drive comprises the step of adjusting a read channel parameter.
- 1 24. (original) The method as recited in claim 22, wherein the step of adjusting a parameter of
2 the disk drive comprises the step of adjusting a servo control parameter.
- 1 25. (original) The method as recited in claim 24, further comprising the steps of adjusting a
2 tracking offset to at least two different settings wherein for each tracking offset setting
3 rereading the selected data sector at least once to generate the averaged read data.
- 1 26. (original) The method as recited in claim 25, wherein for each tracking offset setting
2 rereading the selected data sector multiple times to generate the averaged read data.